

Recon¹
the kit is prevented until a transport medium, such as the liquid, fills a gap (24) allowing a spermatozoa to transmit to a detection zone (26). The kit may be of one-piece construction and utilizes a thin piece of filter material to separate motile from non-motile spermatozoa.--

In the Claims:

Please cancel claim 6.

Please add new claims 46-51.

Please amend the claims as follows:

h2
1. (Amended) An apparatus for separating motile spermatozoa from non-motile spermatozoa in a liquid sample, the apparatus comprising (i) a vessel having a sample receiving inlet, a filtered sample outlet and a sample separation filter mounted therebetween, the sample separation filter having a sample-receiving surface and an opposed surface, and the sample separation filter being effective to prevent flow of the sample therethrough, but permitting passage of motile spermatozoa therethrough when ^{only} said opposed surface of said sample separation filter ^{maintains} is placed in contact with a non-sample liquid medium and (ii) means for supplying a non-sample liquid to ^{only} said opposed surface of said filter, and further comprising a spermatozoa detection means ^{on} the outlet side of the sample separation filter, and spaced therefrom, and a liquid release mechanism, wherein upon activation of the liquid release mechanism, liquid from an integral liquid supply is applied to the sample filtered end of the sample separation filter to provide liquid communication with the spermatozoa detection means.

h3
5. (Amended) ~~An apparatus according to claim 1, wherein the sample additionally comprises non-motile spermatozoa and spermatozoa with reduced motility.~~

h4
9
1. (Amended) An apparatus according to claim 1, wherein the detection means is integral with the apparatus.

h-10 10/8 (Amended) An apparatus according to claim 1, wherein the detection means is a separable component of the apparatus for inserting into the apparatus before, during or after placing the sample separation filter in contact with the liquid medium.

h-12 12/10 (Twice Amended) An apparatus according to claim 9, wherein the filter has a thickness of 200-1000 μ m.

h-15 15/12 (Twice Amended) An apparatus according to claim 1, wherein the filter has a minimum particle retention size of 5-100 μ m.

19/14 (Twice amended) An apparatus according to claim 1, wherein a reagent or a combination of reagents ~~is/are adapted to~~ ^{generates} directly or indirectly generate a visual signal on interaction with spermatozoa located in the spermatozoa detection means.

B7 20/15 (Amended) An apparatus according to claim 14, wherein the reagent or combination of reagents include antibodies that detect an antigen present on spermatozoa and ~~can~~ bind spermatozoa.

21/16 (Amended) An apparatus according to claim 15, wherein spermatozoa, when immobilized by the antibodies, are visually ~~detectable~~ ^{detected} using a visually detectable reagent which binds to spermatozoa.

22/17 (Twice amended) An apparatus according to claim 1, wherein a spermatozoa chemoattractant is located in the spermatozoa detection means.

B8 24/19 (Twice amended) An apparatus according to claim 1, wherein a pick-up zone is located either in the sample separation filter or the spermatozoa detection means, said pick-up zone comprising a reagent or combination of reagents which ~~can bind~~ ^{binds} spermatozoa and ~~being~~ ^{are} transported therewith to a detection area of the spermatozoa detection means.

~~26~~ 21. (Amended) An apparatus according to claim ~~20~~²⁵, wherein the antibodies that detect an antigen present on spermatozoa are detectably labeled.

~~27~~ 22. (Amended) An apparatus according to claim ~~21~~²⁶, wherein the antibodies that detect an antigen present on spermatozoa are detectably labeled with gold particles.

B9 ~~28~~ 23. (Twice amended) An apparatus according to claim ~~20~~²⁵, wherein the antibodies that are located in a detection area of the spermatozoa detection means recognize a different spermatozoa antigen compared to the antibodies located in the pick-up zone.

~~29~~ 24. (Twice amended) An apparatus according to claim ~~20~~²⁵, wherein the antibodies that are located in a detection area of the spermatozoa detection means recognize the same spermatozoa antigen as the antibodies located in the pick-up zone.

~~30~~ 25. (Twice amended) An apparatus according to claim 1, wherein the spermatozoa detection means comprises a spermatozoa acrosome-lysing reagent and a means for detecting pH change.

B10 ~~32~~ 27. (Amended) An apparatus according to claim ~~26~~³¹, wherein the lysis buffer comprises Proteinase K or calcium ionophore A24297.

B11 ~~34~~ 29. (Twice amended) An apparatus according to claim ~~25~~³⁰, wherein the means for detecting pH change is a pH indicator reagent, ~~adapted to visually detect a pH change.~~

~~37~~ 45. (Twice amended) A method of detecting the presence of motile sperm in a sample, comprising:

- B12 ~~46~~ (a) providing a filter having first and second surfaces, the filter permitting migration of the motile sperm therethrough when a liquid is applied to the second surface, wherein the filter is the filter container within the apparatus of any of claims 1 to 31,
- ~~not sample~~
~~one~~

- Bugant*
- (b) applying the sample to the first surface^a of the sample separation filter
 - (c) applying a ^{non-sample} liquid to the ^{opposing} second surface of the sample separation filter
 - (d) providing a well for containing said ^{non-sample} liquid, and
 - (e) detecting sperm that has migrated through the filter and through said ^{non-sample} liquid.

Please add new claims 52-57 as follows:

13 52. (New) An apparatus according to claim *14*, wherein the filter has a thickness of approximately 400-800 μ m.

16 53. (New) An apparatus according to claim *15*, wherein the filter has a minimum particle retention size of approximately 8-60 μ m.

17 54. (New) An apparatus according to claim *15*, wherein the filter has a minimum particle retention size of approximately 10-40 μ m.

18 55. (New) An apparatus according to claim 2, wherein the sample additionally comprises ~~non-motile spermatozoa and~~ spermatozoa with reduced motility.

7 56. (New) An apparatus according to claim 3, wherein the sample additionally comprises ~~non-motile spermatozoa and~~ spermatozoa with reduced motility.

8 57. (New) An apparatus according to claim 4, wherein the sample additionally comprises ~~non-motile spermatozoa and~~ spermatozoa with reduced motility.

Remarks

Claims 1-31 and 45 are pending in this application. Claims 1, 7, 8, 10, 12, 14 - 17, 19, 21 - 25, 27, 29 and 45 have been amended. New claims 52-57 have been added. Claim 6 has been canceled. Claims 1 - 5, 7 - 31 and 52-57 remain for consideration.